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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/715,694	11/17/2000	Ching-Chang Shen	TI-31777	8554

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EXAMINER

RODRIGUEZ, ISABEL

ART UNIT PAPER NUMBER

2836

DATE MAILED: 09/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/715,694

Applicant(s)

SHEN, CHING-CHANG

Examiner

Isabel Rodriguez

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 21 May 2001 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, 8-9, 11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable by Feldkeller (US 6,137,668) in view of Kotowski (US 6,351,360).

a) Regarding to claims 1, 3-4, 11 and 13, Feldkeller discloses an overcurrent protection circuit for a motor drive (Fig. 2) comprising: a first FET (1) and a parallel second switch (13), having a gate input coupled to said first FET input gate and conducting a selectively programmable variable bias current (See col. 5 lines 18-23) and a comparator (14), whose non-inverting input is coupled to the drain of said first FET and whose inverting input is coupled to the drain of said second FET, that generates an output indicative of motor current exceeding a predetermined threshold. Feldkeller does not disclose that the second switch is an FET.

Kotowski shows an overcurrent protection circuit with similar configuration (Fig. 6) in which the second switch is a FET (N1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use any type of switch such as a FET, as showed by Kotowski, because of it requires a small current as an input. Regarding the switch, in absence of persuasive evidence that a particular type of switch is significant, it would have been an obvious matter of choice to one of ordinary skill in the art to utilize any type of switch, such as an FET,

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in order to sense as long as it provide the intended function of conducting a bias current. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

b) Regarding claim 2, it is inherent that the overcurrent protection circuit wherein each FET gates are driven had by a voltage to generate a low on resistance between the respective source and drain.

c) Regarding claims 5 and 6, Feldkeler in view of Kotowsky discloses an overcurrent protection circuit with a drive voltage but gives no details on it. FET drive voltage being generated by a voltage doubler voltage pump is equivalent to setting a gain of 2 in the input instead the gain of 1 showed. It would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the input gain to any desired value as long as it compatible with the requirements of other elements in the circuit in order to properly performs the switching function of the circuit breaker switch. It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

d) Regarding claim 8, Feldkeller in view of Kotowski discloses an over current protection circuit but does not specify that the ratio of said motor current to said bias current is proportional to a size of said first FET with respect to a size of said second FET. It would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the first and second FET size to any desired value as long as it compatible with the requirements of other elements in the circuit in order to properly performs the switching function of the circuit breaker switch. It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

e) Regarding claim 9, Feldkeller in view of Kotowski discloses selectively programmable variable bias current (See col. 5 lines 18-23) and does not specify if controller is analog or digital. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a digital controller, thus making the threshold digitally programmable, because of the advantage of doing of performing faster calculations and many other benefits that are well known in the art. Regarding the digital controller, in absence of persuasive evidence that a particular type of control is significant, it would have been an obvious matter of choice to one of ordinary skill in the art to utilize any type of controller in order to control as long as it provide a the intended function of providing a control signal. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

3. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable by Feldkeller in view of Kotowski in further view of Kato et al. (US 5,637,990).

Feldkeler in view of Kotowsky discloses an overcurrent protection circuit with a comparator but said comparator has no delay circuitry. Kato et al. discloses a similar system (Fig. 3) including a comparator (26) that has a delay circuitry (28). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a delay circuitry with a comparator because it would filter out any transients current spikes through first FET.

Conclusion


5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Isabel Rodriguez whose telephone number is 703-305-4761. The examiner can normally be reached on M-F 8:30-5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on 703-308-3119. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7724 for regular communications and 703-308-7704 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

IR
September 4, 2002



9/4/02

KIM HUYNH
PRIMARY EXAMINER